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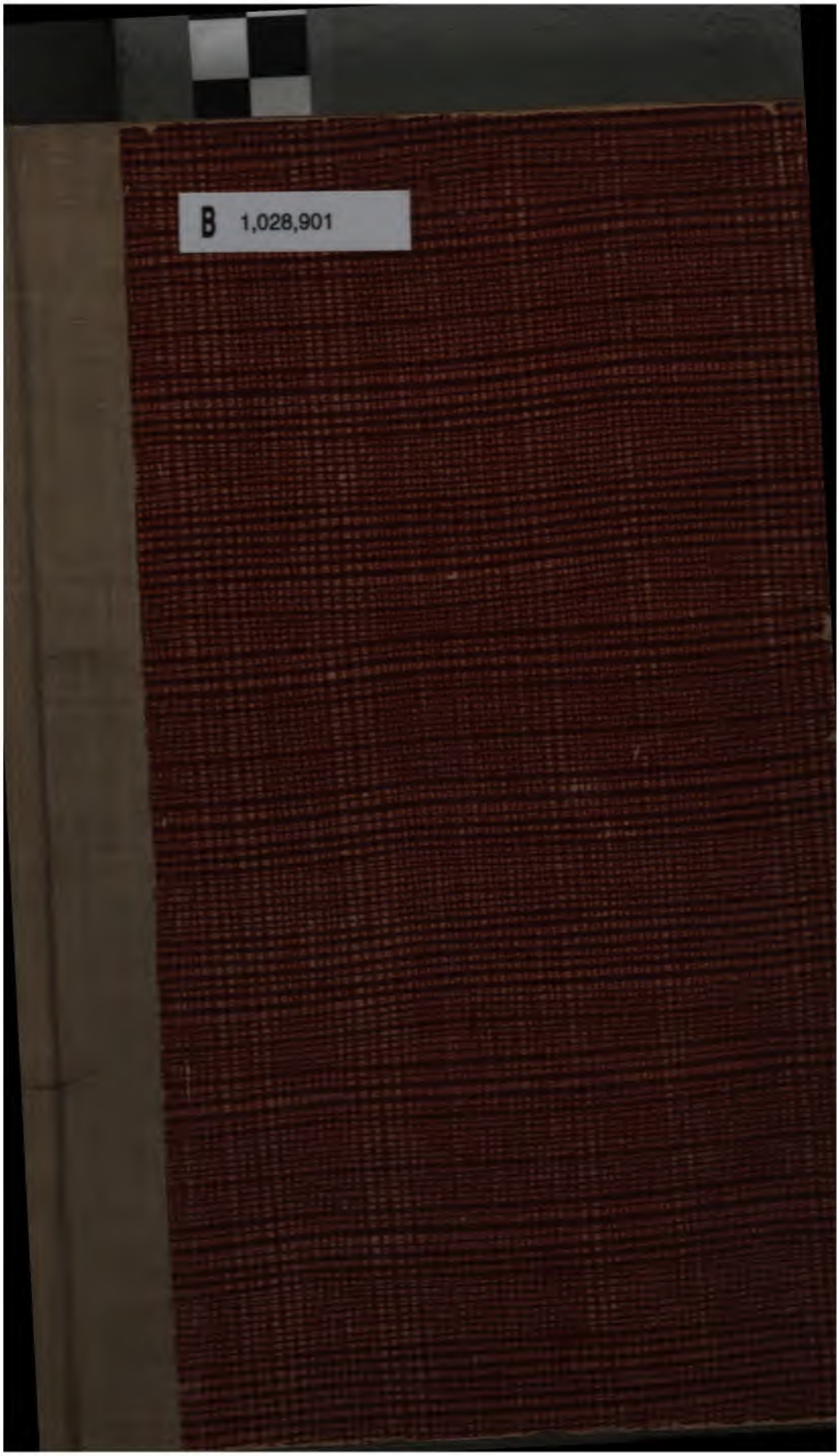
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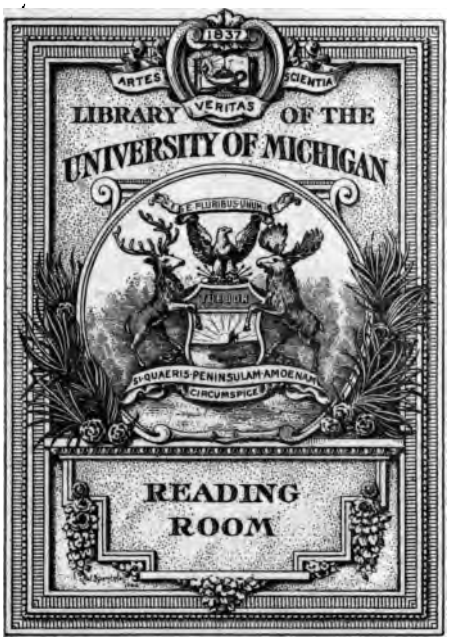
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HANDY LISTS

OF

TECHNICAL LITERATURE

37666

Reference Catalogue of Books printed in English from 1880 *to* 1888 *inclusive; to which is added a select list of books printed before* 1880 *and still kept on Publishers' and Jobbers' lists.*

COMPILED BY H. E. HAFERKORN AND PAUL HEISE.



PART III.

ENGINEERING AND MECHANICS.

COMPRISING APPLIED AND THEORETICAL MECHANICS, MACHINERY; STEAM AND MARINE ENGINEERING, RAILROAD BUILDING, CONSTRUCTION, ENGINEERING, MANAGEMENT, AND PRACTICE; CIVIL ENGINEERING, SURVEYING, LEVELING, HYDRAULIC AND SANITARY ENGINEERING, SEWERAGE AND DRAINAGE, ETC., MECHANICAL DRAWING. Together with a *supplementary List* of Periodicals and Annuals in these Branches.

MILWAUKEE, WIS.:
H. E. HAFERKORN,
1890.

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A Word to Engineers and others.

Mr. Haferkorn having shown me the proof sheets of Part III of his "Handy Lists of Technical Literature" relating to the subjects of Engineering and Mechanics in all their manifold arteries, I find them apparently complete in what they are designed to be, lists of all English books treating upon the above topics, published since 1880 and a full alphabetical index of all the subjects treated therein, with numerical references to authors, etc. A timely publication, it must become invaluable to the engineer, mechanic or student, as a Key to the English literature upon the above special subjects, enabling him almost at a glance to locate any and all treatises upon any of the topics embraced within the above branches.

The compiler has by his exhaustive labors and researches, covering some 2145 works, performed for the profession the tedious, sometimes perplexing search for information and references and presented the results in a more comprehensive and systematic manner than was ever before attempted.

The simplicity and completeness of this catalogue will truly make them "Handy Lists" of reference to all interested in these special subjects, none of whom will be without them, when once their value is thoroughly understood.

MILWAUKEE, JULY 22nd, 1890.

City Engineer's Office.

G. H. BENZENBERG,

M. AM. SOC. C. E.

INTRODUCTION.

In a comparatively short time, the third part of the "Handy Lists of Technical Literature" is now ready for distribution, covering the important subjects of Civil and Mechanical Engineering. As to its completeness and thoroughness, there is nothing to add to what I have said before, particularly in view of the strong endorsement of the work furnished by a professional engineer of high repute. An eminent Scotch scientist has lately said that all scientific text-books more than fifteen years old may safely be thrown in the waste-basket or sent to some paper-mill to furnish material for the printing of new works, and if this is true of theoretical science, it is still more so as regards its applications, in a time when the daring genius of the engineer bids fair to reorganize the condition of the universe.

The searcher for information, whether in the field of engineering or mechanics, has therefore very little need of going beyond the period included in this publication, short though it apparently is.

MILWAUKEE PUBLIC LIBRARY, K. A: LINDERFELT.

August 1890.

PREFACE.

THE third part of the "Handy Lists" is arranged on the same general principle as the preceding ones, but a greater amount of care has been bestowed on making the subject entries and cross-references much more full and detailed, with a view of increasing its usefulness as far as possible. For the same purpose, a short *List of new books and editions published in* 1889 *and* 1890 has been added, making the entries practically complete up to the time of printing. A separate *List of Newspapers, Periodicals and Annuals* has also been furnished, and such publications are therefore excluded from the main catalogue, except such *English Periodicals* as are reported to the official trade journals as being sold in yearly, half-yearly, or quarterly volumes.

All the valuable papers in the *Journal of the Iron and Steel Institute*, however, have been indexed under the proper author and subject headings, a feature which, it is hoped, will be appreciated by the users of this part of the "*Handy Lists.*"

The Appendix contains furthermore:

A selection of important books printed before 1880, and entered as they appear in the catalogues of the different booksellers; also

Such books as do not appear in the official catalogues of new publications for 1880–88, because they are merely *reprints* of old editions;

And such books belonging to the period of 1880–88, as are repeatedly included in *booksellers'* catalogues, but of which the *publisher's* name could not be ascertained.

H. and H.

Explanation of Entries.

The main entry of each work will be found under the author's name, containing full title, year of issue, publisher's or agent's name, editions and price. The *publisher or distributing agent* of each book is indicated by a system of abbreviations, at the end of the entry, which are explained in the accompanying *Key*, containing a list of all publishers and agents represented in this part. For the convenience of booksellers, and especially in order to facilitate procuring books in a hurry, the method of distinguishing the *publisher* of each work, heretofore employed in the key, has in this part been extended to the abbreviations in the main entry, so that the **heavy** letters indicate the *publisher or sole agent*, while those in ordinary light-faced type designate the jobber, to whom the bookseller may apply for copies in case the publisher should be out of the work.

The various editions of a book with their prices, have been specified, including American reprints of English works, the first price mentioned being that of the *original* publication.

If a second value is added, *in a different monetary standard*, it indicates the price at which the book is sold by the jobber or agent stated in connection with each entry.

The exact year of publication has been added in all cases where it could be ascertained, and enclosed in brackets whenever it does not appear on the title-page. When two or more editions have been issued at the same price, the dates of all, but the last have been enclosed in parentheses.

The subject headings are entered in the same alphabetical series as the authors, but are distinguished by being printed in *italics*. The numbers following refer to the numbers prefixed to each entry of a distinct book, and indicate that the subject is treated in the books mentioned.

When a "*see*" or "*see also*" precedes a *number*, it signifies that the subject is incidentally treated in the work referred to; but when placed before a *name*, the "*see also*" indicates other related subjects, which must also be looked up, in order to obtain the whole literature on any given subject.

Works occurring in a preceding part of the "*Handy Lists*" are referred to under the number attached to, each one in part I or part II, as the case may be, and are not repeated in the present part.

DIRECTIONS FOR USING THE "HANDY LISTS."

If looking for a book by a certain known author, turn to his name in the alphabet. The abbreviation at the end of the book entry refers to the *key*, as explained above.

If in search for books or treatises on a certain subject, turn to this subject, printed in *italics*, as stated above. In case there are more than one work referred to, take a slip of paper and copy all the numbers and cross-references, and, with this for a guide, look up first all the numbers copied, then the numbers under each one of the related subjects referred to.

"*In* No. 595, 1882, II" signifies the 2d volume for 1882 of 595, which is the *Journal of the Iron and Steel Institute.*

ABBREVIATIONS.

add. } additional,
addit. } additions.
Adv. Sci. Ser. Advanced Science Series.
Anon. Anonymous.
Balt. Baltimore.
bds. boards (bound in board cover).
Bevan's B. M. I. Bevan's British Manufacturing Industries.
Bost. Boston.
Bull. Pub. Bulletin Publications.
Camb. Math. Ser. Cambridge Mathematical Series.
Camb. Sch. and Coll. T. B. Cambridge School and College Text Books.
Cass. Tech. Man. Cassel's Technical Manuals.
Chic. Chicago.
clo. cloth (binding).
col. } colored.
color. }
Collins' Sci. Text Books. Collins' Science Text Books.
Comp. compiler, compiled.
cont. contained.
corr. corrected.
Cr. } Crown.
cr. }
ctws. 100 weight (Pounds).
Diag. } diagrams.
diag. }
deg. degree.
Dec. December.
ea. each.
Ed. } edition, edited,
ed. } editor.
Elem. Ser. Elementary Series.
enl. enlarged.
Fahr. Fahrenheit.
flex. flexible.
Fold. } folded, folding
fold. }
F.cap. 8vo. Foolscap octavo.
Franklin Sq. Lib. F. Square Library.
Ga. Georgia.
geneal. genealogy.
half mor. half morocco (binding).
half rus. half russia (binding).
hist. ser. historical series.
Ill. Illinois.
Illus. illustrated.
Imp. 8vo. Imperial octavo.
Improv. Improved.
in. inches.
incl. including.
Inst. Institute.
Internat. Educ. Ser. International Educational Series.
Intern. Sci. Ser. International Science Series.
Introd. introduction.
jr. junior.
L. Ele. Sc. Man. or } Longman's Elementary Manuals.
L. Elem. Sci. Man. }
La. } large.
la. }
lbs. Pounds (weight).
Lib. Library.
lithog. lithographed.
Lond. London.
long. longitude.
Manch. Manchester.
Mass. Massachusetts.
Med. 8vo Medium Octavo.
mor. morocco.
Murby's Sci. and Art Ser. Murby's Science and Art Series.
n. d. no date.
N. Y. New York.
Obl. } oblong.
obl. }
o. o. p. out of print.
Pa. } Pennsylvania.
Penna. }
Pap. } paper (in paper binding.
pap. }
Phila. Philadelphia.
Pl. } plates.
pl. }
P. 8vo. Post Octavo.
portr. } portraits.
port. }
pp. pages.
red. reduced.
rev. revised.
Roy. Royal.
School Bull. School Bulletin lications.
Sci. Ser. Sci Series.
Scient. Manuals entific Manuals
ser. } Series.
Ser. }
shp. sheep (bin
Sm. } small.
sm. }
Spec. Ser. Spe ist's Series.
Sq. Square.
Stand. standard.
Subs. } subscrip
subs. } (sold by scription).
suppl. suppleme
Textb. of Sci., books of S. books of Scienc
thous. thousand.
trans. translated.
U. S. United Sta
V. N. S. S. Van trand's Sciences
vol. } volume.
v. }
vols. volumes.
W. pl. with plat
Wash. Washingt
Weale's Ser. We Series.

$ Dollar; c. Cents: £ Pound of Sterling; *s.* Shilling; *d.* Pence.

☞ All other abbreviations are self-explanatory.

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131 **Electricity** in daily life : a popular account of the science and application of electricity to everyday uses. Illus. N. Y. 1890. 8vo. $3.50. **Sc—So.**
Contents: Electricity in service of man—Electric motor—Electric railway—Lighting—Telegraph—Cable-laying—Electricity in warfare—Electricity in the household—Electricity applied to the human body. (Collected from *Scribner's Magazine.*)

Omitted Title for Part III:

Johnson, Geo. H. Drainage tables, giving the necessary diameters of pipes and culverts for the discharge of given quantities under given heads, etc., for the use of railway and city engineers. N. Y. 1888. 12mo., pap. 25c. **Ec.**

6 **Ackerman, W. K.** Early Illinois railroads. A paper read before the Historical Society, 1883, with notes by J. Wentworth and appendix. Chic. 1884. 12mo, pap. $1.00. **F.**

Action of chisels, see 9.

Action of steam in the cylinder of an engine, see 2114.

7 **Adams, C. F., jr.** Federation of the railroad system. Bost. 1880. 8vo, pap. 20c. **Es.**

8 **Adams, C. F., jr.** Taxation of railroads and railroad securities. N. Y. 1880. 12mo. 25c. **Rc.**

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10 **Adams, H.** Strains in ironwork. A course of elementary lectures delivered before the Society of Engineers in their hall, session 1882–3. W. pl. Lond. 1884, cr. 8vo. (12mo) 5*s*, $1.75. Ba—**Su.**

11 **Adams, J. W.** Sewers and drains for populous districts. Embracing rules and formula for the dimensions and construction of works of sanitary engineers. Illus. N. Y. 1880. 8vo. $2.50. Ba—Cp—Mu—Su—**Va.**

12 **Adcock's** Engineer's pocket book for 1880 to 1888. (Annually) Lond. 1881–'88. 12mo, roan, tucks, each 6*s*. **Si.**

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Adelaide Sewers act 13, 1302.

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Administration of workshops 710.

14 **Admiralty.** Boiler explosion act, 1882. Report of preliminary inquiry, No. 263. Explosion of a steam chest at Mess. Acheson Harden, lim., Print Works, Amelia Street, Belfast. Lond. 1888. 9*d*. **Eg.**

Admiralty tests for steel, see 1184.
Aerial ropeways, see 2091.
Agricultural canals, see 1901.
Agricultural engines, see 1918.
Agricultural levelling, see 928.
Agricultural machinery, 2073.
Agricultural surveying, see 928; see also Surveying.

15 **Ainsley, T. L.** The engineer's manual of the local Marine Board examinations for certificates of competency as second and first class engineers. 15th ed. South Shields 1881; the same, 21st ed. 1883. Roy. 8vo. (8vo.) 7*s* 6*d*, $3.00. **Aa**—Ba—Cp—Mu—Su.

Air brake, see also Westinghouse.
Air compressors, see 997, 2091.
Air engines, see 186, 1283, 1696.
Air furnace, see 1184.
Air motive power, 379.
Air pumps, see 1918; see also Mercurial Airpump.
Air pyrometer 1142.

16 **Akerman,** *Prof.* Casperson's converter-ladle. *In* No. 595, 1880, II.

17 **Akerman,** *Prof.* Hardening iron and steel. *In* No. 595, 1880, II.

18 **Alexander, E. P.** Railway practice; its principles and suggested reforms reviewed. (Questions of the Day) N. Y. 1887. 12mo. 75c. **Pu.**

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26 **Allen, A. H.** The existence of nitrogen in iron and steel. *In* No. 595, 1880, I.

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28 **Allen, G.** The same. (Humboldt Lib.) N. Y. pap. 15c. **Hab.**

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31 **Allnut, H.** Wood pavement as carried out on the Kensington High Road, Chelsea, with notes of similar works in Chelsea. Lond. 1881. 8vo, pap. 1*s*, 40c. Cp—**Su.**

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American locomotives, see 761; see also Locomotives.
American mechanics, see 1595; see also Practical Mechanics.

34 **American** Railway Master Mechanics' Association. (Annually.) N. Y. 1880-88. 12mo, pap., ea. $1.75. **Rc**—Rm.

American railways 1, 1030, 1031; see also Railways.

35 **Ames, D. T.** Alphabets adapted to the use of architects, engravers, engineers, etc. Col. pl. N. Y. (1879) obl. 8vo. $1.50. **Ah**—Ba—Cp—Ct—Va—Wl.

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36 **Anderson, A.** Songs of the rail. 3d ed. Lond. 1881, cr. 8o. 3*s*. 6*d*. **Si.**

37 **Anderson, Wm.** On the conversion of heat into work: practical handbook on heat engines. Illus. (Spec. Ser.) Lond. 1886. Cr. 8vo. (12mo.) 6*s*., $2.00. Ba—**Bh**—Cp—Va—Wf.

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39 **Annual** statistical reports of the American Iron and Steel Association. Phila. 8vo., pap., ea. $2.00. **Af**—Su—**Sac.**

40 **Anthony, W. A.,** and Brackett, C. F. Elementary text-books on physics, vol. 1: Mechanics and heat, adapted for colleges, technical schools, etc. Illus. N. Y. 1884. 12mo. $1.50. **Wi.**

41 **Anthony, W. A.,** and Brackett C. F. Text-book of physics. Treating of mechanics and heat, electricity and magnetism, acoustics and optics. Adapted for colleges, technical schools and seminaries. Illus. N. Y. 1887. 8vo.; the same, 4th rev. and enl. ed. 1888, each $4.00. **Wi.**

Anthracite pig iron 489; see also Pig-iron.
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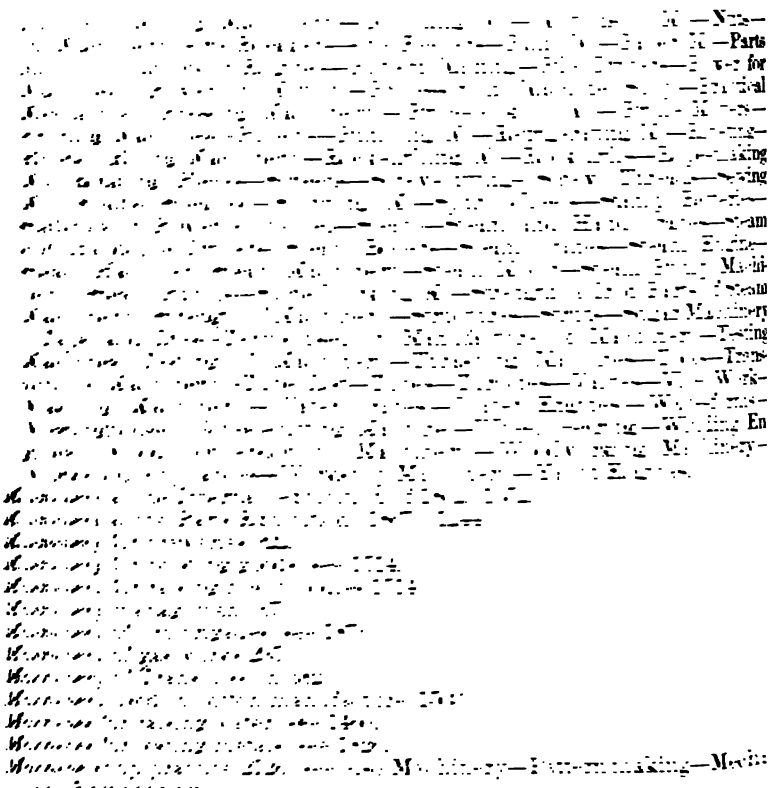
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Well sinking and boring, see 997.

1136 **West, Th. D.** American foundry practice. Treating of loam, dry sand and green sand moulding, and containing a practical treatise upon the management of Cupolas, and the melting of iron. 6th ed. illus. N. Y. 1887. 12mo, $2.50. Ba—Cp—Mu—Su—Wi.

1137 **West, Th. D.** Moulder's text-book, being part II of American foundry practice. A practical treatise on moulding, discussing the question of economy in casting, and the arrangement of a foundry in regard to rapid work. Treating of cupolas, methods of firing, best means of securing perfect and sound castings, etc., being a continuation of Vol. I on this subject, and dealing with a class of work requiring more skill and greater care. 3d ed. Illus. N. Y. 1885. 12mo, $2.50 Ba—Cp—Su—Wi.

Westinghouse automatic and air brake gear (plate of), see 19.
Wheel cutting machine, see 1340.

1138 **Wheeler, J. B.** An elementary course on civil engineering, for the use of the cadets of the United States Military Academy. New rev., corr. and enl. ed. Illus. N. Y. (1877) 1888. 8vo, $4.00. Ba—Cp—Ct—Mu—Wi.

1139 **Wheeler, W. H.** Hints to highway surveyors on the repair of main roads. Lond. 1880. 8vo, Pap. 6*d*, 20c. Su.

1140 **Wheeler, W. H.** The drainage of fens and low lands by gravitation and steam power. W. 8 pl. Lond. 1888. 8vo, 12*s* 6*d*, $4.00. Ba—Su.

Wheel gearing, see 726.
Wheels 194, see 382, 502, 726, 731, 2129; see also Keys for Pulleys, Wheels —Odontograph—Teeth of Wheels—Useful rules for Wheel-wrights.
Wheels of a locomotive, see 21.
Wheel trains, see 2113.
Whistler, Geo. W. Civil engineer 2014.
Whitaker, C. Wood-working tools, and how to use them. The uses of the hammer, knife, plane, rule, chalk-line, square, gauge, chisel, saw and auger. Illus. Bost. 1881. 12mo, 50c. Ba—Cp—**Gd**—**Ho.**
Whitworth, Sir J., see 1621.
Wiborgh, J. Description of a new air-pyrometer. *In* No. 595, 1888, II.
Wiley's iron trade manual 1433.
Wilkins, H. St. C. Treatise on mountain roads, live loads, and bridges. W. pl. Lond. 1880. 8vo, 14*s*, $5.50. Cp—Mu—**Su.**
Williams, C. W. Fuel: its combustion and economy. Being an abridgement of "a treatise on the combustion of coal and the prevention of smoke." With extensive additions on recent practice in the combustion and economy of fuel, coal, coke, wood, peat, petroleum, etc., by D. K. Clark. Illus. (Weale's Ser.) Lond. 1886. 12mo, 3*s* 6*d*, 4*s*, $1.40, $1.60. Ba—Cp—**Lm.**
Williams, C. W. On heat and its relation to water and steam, embracing new views of vaporization, condensation and explosions. Illus. Phila. 1884. 8vo, $3.50. **Ba**—Cp—Va.
†**Williams, F. S.** Our iron roads, their history, construction, and administration. 7th rev. ed. Illus. Lond. (1883, '84), Demy 8vo, (8vo) 12*s*, $5.00. **Bi**—Bk—Ba—Cp.
Williams, F. S. The Midland Railway. Its rise and progress. A narrative of modern enterprise. 3d ed. Illus. Lond. 1883. Demy 8vo 12*s*. **Bi**—Bk.
Williams, G. Tabulated weights of angle and tee iron. Lond. 1883. Obl. 32mo, 2*s* 6*d*. **Su.**
Williams, P. Iron and steel permanent way. *In* No. 595, 1881, I.
Williams, W. M. Simple treatise on heat. Illus. Lond. 1880. P. 8vo, (12mo) 2*s* 6*d*, $1.25. **Cl**—Va.
†**Williamson, B.**, and Tarleton, F. A. An elementary treatise on dynamics, containing applications to thermo-dynamics, with many examples. Lond. 1885. Cr. 8vo, 10*s* 6*d*. **Lo.**
Willis, A. Reactions in the open-hearth process. *In* No. 595, 1880, I.
Willis, R. Extracts from the second edition of principles of mechanism, designed for the use of students in the universities, and for engineering students generally. Describing those models considered by the department of science and art to be indispensable for the efficient teaching of subject VII. Applied mechanics, including the original diagrams, with new illustrations of these models as they were finally approved by Prof. Willis, for use in class instruction. Lond. 1888. Demy 8vo, 1*s*. **R†.**
Wilson, A. Water gas as used for metallurgical purposes. *In* No. 595, 1888, I.
Wilson, F. J. F. Typographic printing machines and machine printing. 4th ed. Illus. Lond. 1888. P. 8vo, (12mo) 5*s*, $2.50. Ba—**Wy.**
Wilson, F. J. F., and Grey, D. Practical treatise upon modern printing machinery and letterpress printing. Illus. Lond. 1888. Roy. 8vo, £1 1*s*, $10.00. **Ce.**
Wilson, F. R. Practical guide for inspectors of nuisances. Lond. 1881. P. 8vo, (12mo) 4*s* 6*d*, $2.00. Ba—**Ke.**
Wilson, R. The screw propeller: who invented it. 2d. ed., with appendix. Illus. Lond. 1881. 8vo, Pap., 1*s*, 40c. **Su.**
Wilson, R. Treatise on steam boilers: their strength, construction and economical working. 5th ed. Illus. Lond. 1883. 12mo, 6*s*, $2.50; see also No. 2142. Ba—Cp—**Lm**—Mu—Va.
Wilson, R. Boiler and factory chimneys: the draught-power and stability. With a chapter on lightning conductors. 2d ed. Lond. (1877) 1887. Cr. 8vo, (12mo) 3*s* 6*d*, $1.50. Ba—Cp—**Lm**—Va.
Winches, see 42.
Winding Engines, see 42, 2091, 2143.

Wind-mill as a prime mover 1163.
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1161 **Winslow, A.** Stadia surveying. The theory of stadia measur accompanied by tables of horizontal distances and differences of the reductions of stadia field observations. (V. N. S. S.) N. 18mo., bds. 50c. Ba—N

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1162 **Wittgenstein, K.,** and Kurzwernhart, A. The manufacture of s brown coal at Teplitz. *In* No. 595, 1882, II.

1163 **Wolff, A. R.** The windmill as a prime mover. Comprehendin thing of value relating to windmills, their use, design, construc Illus. N. Y. 1886. 8vo, $3.00.

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1167 **Wood, De V.** The mechanics of fluids; being supplement to the cal mechanics, (and sold separately to supply those who mechanics of solids). N. Y. 1882. 8vo, $1.50.

1168 **Wood, De V.** Principles of elementary mechanics. 7th rev. e N. Y. (1882) 1887. 12mo, $1.25; supplement and key to the sa Ba-

1169 **Wood, De V.,** *ed.* Treatise on civil engineering. Rev. and additions, new plates, appendix, and a complete index. Also on river improvements, by E. A. Mahan. W. pl. N. Y. 1886. 8 Cp—

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1171 **Wood, H. G.** The law of railroads. 3 vols. Bost. 1885. 8vo, sh

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1173 **Woodcock, G. E.** The mutual relations of carbon and iron in No. 595, 1882, I.

Wood conversion by machinery 1837.
Wooden columns 635.
Wood pavement 31, 2002.

1174 **Woods, A. T.,** and Stahl, A. W. Elementary mechanism: tex students of mechanical engineering. Illus. N. Y. 1885. 12m

Wood screws, see 1201.

1175 **Woodward, C. M.** History of the St. Louis bridge, contain account of every step in its construction and erection, and incl theory of the ribbed arch, and the tests of materials. Illu St. Louis, Mo., 1881. 4to, $20.00; half mor. $25.00 net. Ba—Cp

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Work done by fire streams 1446.
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Working drawings of engine houses 1404.
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Work manager's handbook 562.
Workman's manual of engineering 701.
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6 **Workshop** Book: practical problems and lines for working drawings. Lond. 1885. Sq. 16mo, 2*s* 6*d*. **Si.**
Workshop companion 124, 2065.
Workshop machinery, see 259, 1340.
Workshop management 1898.
Workshop manipulation 1835.
Workshop receipts 480, 657, 658, 998, 1920.
Workshops, see Administration—Economic Conduct of Workshops—Lectures in a Workshop—Railway Workshops.
Workshops (Railway), see also Working drawings of Workshops.
Workshops, Sanitation in, see 2099.
Works in iron 1718.

7 **Wormell, R.** Elementary course of hydrostatics and sound. 2d ed. Lond. 1881. P. 8vo, (12mo) 3*s* 6*d*, $1.20. Cp—**Gq**—Va.

8 **Wormell, R.** Lectures on heat: elementary textbook for students. 2d ed. Lond. 1884. 8vo, 1*s*. **Mv.**

9 **Wright, A. W.** American street railways; their construction, equipment, and maintenance. Illus. Chic. 1888. 12mo, flex. lea., $5.00 Ba—**Rm.**
N. B.—Contains: Track construction; paving; track cleaning; equipment; buildings for street railways; management of street railways.

0 **Wright, T. W.** Treatise on the adjustment of observations; with applications to geodetic work and other measures of precision. Illus. N. Y. 1884. 8vo, $4.00. Mu—**Va.**

1 **Wrightson, Thos.** On some physical changes occurring in iron and steel at high temperatures. *In* No. 1629, 1879, II; and *in* No. 595, 1880, I.

2 **Wrightson, Thos.** New centre crane for Bessemer steel work. *In* No. 595, 1883, II.
Wrinkles and recipes 1265.
Wrought iron 792, 1099a; see also Architectural Wrought-iron—Strength of Wrought-iron.
Wrought iron and steel 1644.
Wrought iron beams, see 1960, 2092.
Wrought-iron, application of, in bridgebuilding, see 1325.
Wrought-iron Bridges and Girders 1601, 1604, 2008, see 1464.
Wrought-iron for building purposes 1464, see 1099a.
Wrought iron for gun carriages 242.
Wrought-iron Girders 1604, 1664, see 1770.
Wrought-iron permanent way 2059.
Wrought-iron pipe works, in U. S., see 2096.
Wrought iron work 1438; see 1099a, see also Designing Wrought-iron Work.
Wrought iron works (Artistic) 32.

3 **Wurtele, A. S. C.** Standard measures of U. S., Great Britain and France: historical and actual comparisons; with an introd. of the metre. Lond. 1882. Roy. 8vo, Pap., 2*s*, 80c. **Su.**

4 **Wylie, C.** Iron an steel founding. W. Diagrams. Sunderland 1881. P. 8vo, 3*s* 6*d*; the same, 2d rev. and enl. ed. w. 39 diagrams. Sunderland 1888. P. 8vo, (12mo) 5*s*, $2.00. Ba—Mu—**Rh**—Si—Su.

5 **Wylie, C.** Treatise on iron founding. Illus. w. diagrams. Sunderland 1885. P. 8vo, (12mo) 2*s* 6*d*, $1.00. Mu—**Rh**—Si—Va.
N. B.—A new (second) ed. published in 1889 at the same price.

Yacht engines, see 1375.
Young engineers own book 900.
Young mechanic 665.

1186 **Zeuner, G.** Treatise on valve-gears, with special consideration of the link-motions of locomotive engines. New rev. and enl. ed., trans. from the 4th German ed. by J. F. Klein. W. pl. Lond. 1884. 8vo. 12*s* 6*d*, $5.00. Ba—Cp—Mu—Su—Va.

Zinc 1519; a more complete list in part I.
Zincworking, see 312.

1187 **Zwicker, P. H.** Instructor for procuring stationary and steam engineer's license. St. Louis, Mo. 1887. 24mo, $2.00; see also No. 2145. Hk—Z

APPENDIX.

Select List of books printed before 1880 *and still kept on publishers' or jobbers' lists.*

N. B.—If a dagger † appears before the title it denotes that the DATE of publication could not be traced, but that the book is inserted in "Whitaker's Reference Catalogue," 1889.
If the YEAR appears in brackets [] it designates that the book was copyrighted in that year, but the year does not appear on the title-page.
The year of the FIRST or a FORMER edition is given in parenthesis ().
In cases where an English book is handled by an American importer and *vice versa*, the size mentioned in the importer's catalogue appears in parenthesis().
When the place, where the book may be had, appears in parenthesis, thus (Phila. 1878) it designates that the place of publication could not be found.

1188 **Abel, C. D.** Elementary principles of machinery in its construction and working. (Weale's Ser.) Illus. Lond. (n. d.) 12mo, 1*s* 6*d*, 60c. Cp—Lm.

1189 **Abel, C. D.** Rudimentary and elementary principles of the construction and on the working of machinery. (Weales's Ser.) Lond. (n. d.) $3.30. Va.

1190 **Abernathy, R. J.** Practical hints on mill building. Illus. Moline, Ills., (n. d.) $4.00. Ba—Mu.

1191 †**Acworth, W. M.** The railways of England. Illus. Lond (n.d.) 8vo. Mx.

1192 **Adams, C. F., jr.** Notes on railroad accidents, their causes and prevention. N. Y. 1879. 12mo, $1.25. Ba—Cp—Pu—Rm—Va.

1193 **Adams, C. F., jr.** Railroads and railroad questions. Rev. ed., with appendix. N. Y. (n.d.) 12mo, $1.25. Ba—Pu—Rm.

1194 **Adams, C. F., jr.** Railroads; their origin and problems. N. Y. [1878.] 12mo, $1.25. Cp—Pu—Va.

1195 †**Adams, H.** Designing wrought and cast iron work.
Part I: Wrought and cast iron girders. Intended for the use of draughtsmen commencing on iron work. The information consists of descriptive notes, detailed calculations, estimates of weight and cost, and complete designs. With 2 large plates.
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Part III: Notes for a rolled iron girder and flitched beam, with comparisons of strength of various parts.
Part IV: Notes for a trussed fir beam, with a rolling load, a cast-iron stanchion, and riveted joints. Lond. (n.d.) Demy 8vo, pap. each 1*s* 6*d*, 60c. Su.

1196 †**Adams, H.** Hydraulic machinery, past and present. A lecture delivered to the London and Surburban Railway Official's Association. W. pl. *Lond.* (n. d.) 8vo, pap. 1s, 40c. Su.

1197 †***Adams, H.*** Joints in woodwork, a paper. W. pl. Lond. (n. d.) 8vo, pap. *1s, 40c.* Su.

Adamson, D. On high-pressure steam generally and its application to quadruple engines. *In* No. 1629, 1875, II.

Adamson, Dan. On the mechanical and other properties of iron and mild steel. *In* No. 1629, 1878 II; 1879, I.

Ainslie, J. Land surveying. New and enl ed., embracing railway, military, marine, and geodetical surveying, by Wm. Galbraith. W. atlas. Edinburgh 1849. 8vo, $9.00. Cp.

†**Aitken, W. C.** Guns, nails, locks, wood screws, railway bolts, and spikes, buttons, pins, needles, saddlery, electroplate. (Bevan's B. M. I.) Lond. (n. d.) P. 8vo, 3*s* 6*d*. **Sv.**

Akerman, R. On hardening iron and steel. *In* No. 1629, 1879 II.

Akerman, R. On the present state of the iron manufacture in Sweden. W. map. Bost. 1878. 4to. $1.75. **H***

Akerman, R. Recent advances in the manufacture of iron and steel. *In* No. 1629, 1878, II.

†**Alban, E.** The high-pressure steam engine, an exposition of its comparative merits, and an essay towards an improved system of construction. Trans. from the German, with notes by Dr. Pole. W. pl. Lond. 1848. 8vo, 16*s* 6*d*, $7.00. Ba—Cp—**Lm**—Va.

Alden, Geo. I. Notes on Rankine's applied mechanics. Hartford 1877. 12mo, $1.75. Cp.

†**Aldis, W. St.** An introductory treatise on rigid dynamics. (Camb. Math. Ser.) Lond. (n. d.) 4*s*. **Bh.**

Allan, A. Strength of beams under transverse loads. (V. N. S. S.) N. Y. 1875. 24mo, bds. 50c. Ba—Cp—Su—**Va.**

Allan W. Theory of arches. (V. N. S. S.) N. Y. 1874. 24mo, bds., 50c. Ba—Cp—Su—**Va.**

†**Allen, J. R.** Theory and practice in the design and construction of dock walls. Lond. 1876. Cr. 4to (4to) 6*s*, $2.50. Ba—Cp—**Su.**

Allen, Z. Philosophy of the mechanics of nature, and the source and modes of action of natural motive power. Illus. N. Y. 1852. 8vo, scarce, $4.50. Cp.

Amateur mechanic's workshop (The). Containing plain and concise directions for the manipulation of wood and metals. Lond, 1870. 8vo. $3.00. Ba—Cp—Va.

†**Anderson, J.** On the strength of materials and structures: the strength of materials as depending on their quality and as ascertained by testing apparatus; the strength of structures, as depending on their form and arrangement, and on the materials of which they are composed. Illus. (Textbooks of Sci.) Lond. 1872. F.cap. 8vo, (12mo), 3*s* 6*d*, $1.25. Ba—**Lo**—Mu—Va.

Anderson, J. The same. N. Y. 1872. 12mo, $1.50. **Ak**—Cp—Va.

Anderson, R. C. Tables for facilitating calculation in earthen and masonry dams. Lond. 1876. 8vo, $16.80. Cp.

Andre, G. G. Draughtsman's handbook of plan and map drawing, including instruction for the preparation of engineering, architectural, and mechanical drawings. Illus. Lond. 1874. Cr. 4to, $3.75. Ba—Cp—**Su.**

†**Andre, G. G.** Mining machinery, a descriptive treatise on the machinery, tools and other appliances used in mining. W. 182 plates, drawn to scale. 2 vols. Lond. [1878.] Roy. 4to, (4to) $15.00. Cp—**Su**—Va.

†**Andre, G. G.** Rock blasting: a practical treatise on the means employed in blasting rocks for industrial purposes. W. pl. Lond. 1878. 8vo, $3.00. Cp—**Su**—Va.

†**Ansted, D. T.** Water and water supply. I: surface waters. Lond. 1878. Demy 8vo (8vo), 18*s*, $7.25. **Ac**—Ba—Cp—Va.

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1243 **Barnaby, N.** The use of steel in naval construction. *In* No 1€ 1879, I.

Barnard, F. A. P. Report on machinery and processes of the industrial arts and apparatus of the exact sciences. Paris Exposition of 1867. Illus. N. Y. 1869. 8vo, $5.00. Cp—Va.

Barr, W. M. Practical treatise on the combustion of coal; including descriptions of various mechanical devices for the economic generation of heat by the combustion of fuel, whether solid, liquid or gaseous. Indianapolis, Ind., 1879. 8vo, $2.50. Ba—Bt—Cp—Va—**Ya.**

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Bartol, B. H. Treatise on the marine boilers of the United States. N. Y. 1866. 8vo, $1.50. Cp.

Bashforth, F. General tables for facilitating the calculation of earthworks for railways, canals, etc., with a table of proportional parts. Lond. (n. d.) 8vo, $1.50. Cp.

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Beardmore, N. Manual of hydrology. Containing hydraulic and other tables, rivers, flow of water, springs, wells, and percolation, tides, estuaries, and tidal rivers, rainfall, and evaporation. W. pl. Lond. (1862) 1867. 8vo, £1. 4*s*, $10.00. Cp—Mu—Su—Va.

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Miller's Review. Organ of the Penn'a Miller's State Association. Monthly. Ed. and pub. H. L. Everett. $1.00 per year. Office: 227 S. 6th St., Philadelphia, Pa.

Milling World and Chronicle of the Grain and Flour Trade. Monday. Ed. by McFaul and Nolan. $1.50 per year. Office: Cor. Pearl and Seneca Sts., Buffalo, N. Y.

Millstone and Corn Miller. Monthly. Ed. by D. H. Ranck and L. H. Gibson. $1.00 per year. Pub. by the D. H. Ranck Pub. Co., Indianapolis, Ind.

Mining Engineer. Monthly. 2½*d.* Pub. by the Associated Miner's Corporation, Grampound Road, London.

Modern Miller. Monthly. Ed. and pub. by Clifford F. Hall, Kansas City, Mo. $1.00 per year.

Municipal Review. Friday. 6*d.* Pub. by S. W. Norton, 12 Catherine St., W. C. London.

Municipal World. Wednesday. 24*s* per year. Office: 337 Strand, W.C., London

National Car and Locomotive Builder. Monthly. Ed. by Angus Sinclair. $1.0 per year. Pub. by R. M. Van Arsdale, 140 Nassau St., New York, N. Y.

National Steamship and Railway Gazette. Monthly. Ed. by E. S. S. Kemp. $1.0 per year. Office: 65 Mozart St., Chicago, Ill.

New England Stove, Hardware, and House Furnisher. Monthly. $1.00 per yea Pub. by C. C. Walden & Co., Springfield, Mass., and 29 Park Row, New York N. Y.

Northwestern Mechanic. Monthly. Ed. by James F. Hobart. Pub. by the North western Mechanic Co., Minneapolis, Minn.

Northwestern Miller. Friday. Ed. and pub. by C. M. Palmer, Minneapolis, Minn $2.00 per year.

Northwestern Railroader. Friday. Ed. and pub. by H. P. Robinson, Minneapo lis, Minn. $3.00 per year.

Official Railway Equipment Guide. Monthly. Ed. by S. P. Sechrist. $3.00 pe year. Pub. by J. B. Savage, Cleveland, Ohio.

Pacific Coast Wood and Iron. Monthly. Ed. and pub. by S. L. Everett, $1.50 pe year. Office: 4 California St., San Francisco, Cal.

Patent Review. Monthly. $1.00 per year. Ed. and pub. by A. Harvey, Ottaw Ont., Canada.

Phillips' Machinery Register. Illus. Monthly. 6*d.* Pub. by C. D. Phillip Newport, (Monmouth) England.

Plumber and Decorator, and Journal of Gas and Sanitary Engineering. Illu Monthly. 6*d.* Pub. by Dale, Reynolds & Co., 24 Wellington St., Strand, W. C London.

Plumber's Trade Journal. Semi-monthly. Ed. by James M. Heatherton. $1.(per year. Office: 66 Beekman St., New York, N. Y.

Power and transmission. Monthly. Ed. by Ed. A. Jernegan. $1.00 per year. Pul by the Power and Transmission Pub. Co., Mishawaka, St. Joseph Co., Ind.

Power-Steam. Monthly. Ed. and pub. by H. M. Swetland. $1.00 per year. Offic 113 Liberty St., New York, N. Y.

Practical Engineer. *Illus.* Friday. 1*d.* Pub. by the Technical Pub. Co., lim., *Grosvenor Chambers,* Deansgate, Manchester, and 282 Strand, London.

Practical Mechanic. Monthly. Ed. by A. B. Grimes. $1.00 per year. Pub. by F. S. Blanchard & Co., Worcester, Mass.

Proceedings of the Association of Municipal and Sanitary Engineers and Surveyors. Issued annually, about Sept. 10*s* 6*d*. Pub. by E. & F. N. Spon, 125 Strand, W. C., London.

Proceedings of the Institution of Civil Engineers. February, May, August, November. Gratis to members. W. plates. Office: 25 Great George St., Westminster, S. W., London.

Railroad and Engineering Journal. Monthly. Ed. and pub. by M. N. Forney. $3.00 per year. Office: 145 Broadway, New York, N. Y.

Railroad Gazeteer. Monthly. Ed. by B. F. Giddings. $1.00 per year. Pub. by H. S. Crocker, 110 Sutter St., San Francisco, Cal.

Railroad Gazette. Friday. Ed. by H. G. Prout & B. B. Adams, jr. $4.20 per year. Pub. by the Railroad Gazette Co., 73 Broadway, New York, N. Y.

Railroad Topics. Monthly. Ed. by C. D. Galvin. $1.00 per year. Office: 35 Frankfort St., New York, N. Y.

Railway Age. Friday. Ed. by E. H. Talbott and H. R. Hobart. $4.00 per year. Pub. by the Railway Age Pub. Co., 205 La Salle St., Chicago, Ill., and 45 Broadway, N. Y.

Railway and Corporation Law Journal. Saturday. Ed. by Chas. F. Beach, jr. $10.00 per year. Office: 95 Nassau St., New York, N. Y.

Railway and Shipping Contractor. Monthly. 6*d*. Pub. by W. Biggar, 27 Chancery Lane, W. C., London.

Railway Diary and Official's Directory. Annualy. December. 1*s*. Pub. by McCorquodale & Co.; lim., Cardington St., N. W., London.

Railway Engineer. Illus. Monthly. 2*s*. Pub. by E. W. Allen, 4 Ave Maria Lane, E. C. London.

Railway Herald. Saturday. 1*d*. Pub. by the Railway Press Co., lim., 73 Southampton Buildings, Chancery Lane, W. C., London.

Railway Life. Monthly. Ed. by A. C. Campbell. $1.00 per year. Pub. by W. B. and A. C. Campbell, Toronto, Ont., Canada.

Railway Master Mechanic. Monthly. Ed. by E. N. Lewis. $1.00 per year. Pub. by the Railway Purchasing Agent Co., 816 Broadway, New York, N. Y.

Railway News. Monthly. $2.00 per year. Office: 32 Cortlandt St., New York.

Railway News and Joint Stock Journal. Saturday. 6*d*. Pub. Office: 3 Whitefriars St., Fleet St., E. C., London.

Railway Official Gazette. (Formerly *Railway Fly-Sheet*). Monthly, issued the 15th. 1*d*. Pub. by McCorquodale & Co., lim., Cardington St., N. W. London.

Railway Press. Journal on practical Railway Working, Engineering, and Construction. Friday. 4*d*. Pub. by the Railway Press Co., lim., 73 Southampton Buildings, Chancery Lane, W. C., London.

Railway Record. Register of Railway and Joint Stock Enterprise. Wednesday. 6*d*. Pub. Office: 17 East Temple Chambers, Fleet St., E. C., London.

Railway Review. Friday. 1*d*. Pub. Office: 55 Colebrooke Row, Islington, N., London.

Railway Review. Saturday. Ed. by W. D. Crosman and Willard A. Smith. $4.00 per year. Pub. by the Railway Review Pub. Co., 185 Dearborn St., Chicago, Ill., and 189 Broadway, New York, N. Y.

Railway Register. Saturday. Ed. by C. I. Ingerson. $4.00 per year. Manager: D. McArthur, 304 N. 8th St., St. Louis, Mo.

Railway Service Gazette. Thursday. Ed. by W. R. Leflet. $2.00 per year. Pub. by the Railway Service Gazette Pub. Co., Toledo, Ohio.

Railway Supplies Journal. (Formerly *Railway Gazette*.) Illus. Saturday. 6*d*. Pub. Office: 24 Bouverie St., E. C., London.

Railway Times. Saturday. 5*d*. Pub. by H. Allen, 2 Exeter St., Strand, W. C., London.

Railway World. Saturday. $4.00 per year. Office: 420 Library St., Philadelphia.

Reports of the Sanitary Assurance Association. Annually, February. Price varies from 21*s*. Pub. Office: 5 Argyll Place, W., London.

Roller Mill. Monthly. Ed. by Chas. S. Parke, $1.00 per year. Pub. by Edwin L. Burdick & Co., 56 Pearl St., Buffalo, N. Y.

Ryland's Iron Trade Circular. Saturday. 21*s* per year. Pub. Office: 46 Union Passage, Birmingham.

Safety Valve. Monthly. Ed. by C. W. Sutherland. $2.00 per year. Pub. by F. W. Gade, 120 Broadway, New York, N. Y.

Sanitary Engineering, with which is incorporated *The Sanitary Engineer*, ar *Sanitary Register*. Saturday. 2*d*. Pub. by J. Beveridge, 47 Fetter Lane, London.

Sanitary Era. Monthly. Ed. and pub. by Wm. C. Conant. $1.00 per Address: P. O. Box 3059, New York, N. Y.

Sanitary Journal. Monthly. 6*d*. Pub. by A. Macdougall, 7 Mitchell Glasgow.

Sanitary News. Saturday. Ed. by A. H. Harryman. $2.00 per year. P Thomas Hudson, 88, 90 La Salle St., Chicago, Ill.

Sanitary Plumber. Semi-monthly. Ed. by S. Lloyd. $1.00 per year. Pub. Hydraulic and Sanitary Plumber Pub. Co., lim., 23 Park Row, New York

Sanitary Record. Monthly. 1*s*. Pub. by Allen & Co., 13 Waterloo Place, London.

Saw Mill Gazette. Monthly. Ed. and pub. by M. T. Richardson. $1. year. 86 Reade St., New York, N. Y.

Science Amateur and Home Artisan. Monthly. Ed. by W. F. Underwood. per year. Pub. by A. L. Chatterton & Co., 78 Maiden Lane, New York, N

Scientific American. Saturday. $3.00 per year; Export edition, monthly per year; Spanish edition for South America: *La America Cientifica Ind* monthly $3.00 per year; Architects' and Builder's edition, monthly, $2 year. Munn & Co., editors and publishers, 361 Broadway, New York, N.

Scientific American Supplement. Saturday. Ed. and pub. by Munn & Co. per year; $7.00 together with the Scientific American. Office: 361 Bro New York, N. Y.

Sewing Machine Advance. Monthly. Ed. by Walter Scates. $1.00 pe Office: 158 South Clark St., Chicago, Ill.

Sewing Machine and Cycle News, with which is incorporated the Cycling Saturday. 1*d*. Pub. by W. McWilliam, 2 Whitefriars St., E. C., London.

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Sewing Machine World. Quarterly. English, French, German, and S $1.00 per year. Ed. and pub. by Emile James, 44 Clinton Place, New

Southern Industrial Railroad Record. Monthly. Ed. by A. L. Harris. $1 year. Pub. by the Record Pub. Co., Atlanta, Ga.

Stationary Engineer. Monthly. $1.00 per year. Pub. by the Engineer' Lakeside Building, Chicago. Ill., and 181 Broadway, New York, N. Y.

Stone. Monthly. Ed. by L. H. Gibson. $2.00 per year. Pub. by D. H. Pub. Co., Indianapolis, Ind.

Stoves and Hardware. Thursday. Ed. by T. S. Bowman. $2.00 per year. 522 N. 3d St., St. Louis, Mo.

Street Railway Gazette. Monthly. $2.00 per year. Pub. by the Gazett Lakeside Building, Chicago, Ill., and 181 Broadway, New York, N. Y.

Street Railway Journal. Monthly. Ed. by E. P. Harris. $2.00 per year. the American Railway Pub. Co., 113 Liberty St., New York, N. Y.

Transactions of the American Society of Civil Engineers. Monthly. Ed. b Bogart. Pub. by the American Society of Civil Engineers, 127 E. 23d New York, N. Y.

Transactions of the Sanitary Institute of Great Britain. Annually, June. Pub. by E. Stanford, 26 Cockspur St., Charing Cross, S. W., London.

Transactions of the Society of Engineers. Illus. Annually, 12*s* 6*d*. Pub. b F. N. Spon, 125 Strand, W. C., London, and 12 Cortlandt St., New York.

United States Miller and Milling Engineer. Monthly. Ed. and pub. by E. son Cawker. $1.00 per year. Office: 124 Grand Ave., Milwaukee, Wis.

United States Sewing Machine Times. Saturday. Ed. by Fred. Bell. $1 year. Pub. by the Bell Pub. Co., 834 Broadway, New York, N. Y.

Universal Engineer. Being the foreign supplement to the *Ironmonger*. fourth Saturday. 6*d*. Pub. by E. P. Halse, 42 Cannon St., E. C., London

Water Works Statistics. Annually, April. 2*s* 6*d*. Pub. by C. W. Hasti Buckingham St., Strand, W. C., London.

Western Fireman. Wednesday. Ed. and pub. by J. S. Bloomingston. $2 year. Office: 177 La Salle St., Chicago, Ill.

Western Machinist. Semi-monthly. Ed. by F. N. Carter. $1.00 per year. *29 Euclid Ave.*, Cleveland, Ohio.

Work. *Illus.* Wednesday for Saturday. 1d.; the same, monthly, 6d. *Cassell & Co., lim.*, La Belle Sauvage, Ludgate Hill, E. C., London.

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